

Date: Fri, 4 Mar 94 03:09:59 PST  
From: Info-Hams Mailing List and Newsgroup <info-hams@ucsd.edu>  
Errors-To: Info-Hams-Errors@UCSD.Edu  
Reply-To: Info-Hams@UCSD.Edu  
Precedence: Bulk  
Subject: Info-Hams Digest V94 #234  
To: Info-Hams

Info-Hams Digest                      Fri, 4 Mar 94                      Volume 94 : Issue 234

Today's Topics:

ARRL DX Bulletin #12 - February 28, 1994  
    Easy to get 6:1 balun?  
    Errors in TNC2 firmware???  
        FT-530 vs TH-78A  
        Help!!! Please :)  
Medium range point-to-point digital links  
    Nude Radio Amateurs

Send Replies or notes for publication to: <Info-Hams@UCSD.Edu>  
Send subscription requests to: <Info-Hams-REQUEST@UCSD.Edu>  
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Info-Hams Digest are available  
(by FTP only) from UCSD.Edu in directory "mailarchives/info-hams".

We trust that readers are intelligent enough to realize that all text  
herein consists of personal comments and does not represent the official  
policies or positions of any party. Your mileage may vary. So there.

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Date: Wed, 2 Mar 1994 20:16:02 MST  
From: ihnp4.ucsd.edu!swrinde!gatech!newsxfer.itd.umich.edu!nntp.cs.ubc.ca!alberta!  
ve6mgs!usenet@network.ucsd.edu  
Subject: ARRL DX Bulletin #12 - February 28, 1994  
To: info-hams@ucsd.edu

ZCZC AE10  
QST de W1AW  
DX Bulletin 12 ARLD012  
>From ARRL Headquarters  
Newington CT February 28, 1994  
To all radio amateurs

SB DX ARL ARLD012  
ARLD012 DX update

Documentation has been received and approved for the following operations:

Call: Operations Beginning (mm/dd/yy):

3V8W	07/17/93	CW only 7, 14, 18, 21Mhz
7Q7JA	05/07/90	
8Q7BX	12/07/93	
8R1/KD4GMV	01/11/94	
8R1/KK4WW	01/11/94	
9M2/DK7PE	05/17/93	
A35CW	01/06/94	
FS/W2QM	12/01/93	
H44/DK7PE	12/13/93	
HI8/7Q7JA	07/19/91	
P29VCW	05/18/93	
T7/DK7PE	05/10/93	144 Mhz
VK9MM	09/18/93	
V51/7Q7JA	07/18/91	
V63MV	12/23/92	
YJ0AXX	12/23/93	
ZD9SXW	09/29/93	
ZK1ACW	01/17/94	
ZV0ASN	01/01/94	
NNNN		

--

James J. Reisert Internet: reisert@wrksys.enet.dec.com  
Digital Equipment Corp. UUCP: ...decwrl!wrksys.enet.dec.com!reisert  
146 Main Street - ML03-6/C9 Voice: 508-493-5747  
Maynard, MA 01754 FAX: 508-493-0395

-----  
Date: Thu, 3 Mar 1994 15:01:01 GMT  
From: netcomsv!netcomsv!bongo!julian@decwrl.dec.com  
Subject: Easy to get 6:1 balun?  
To: info-hams@ucsd.edu

In article <wier-020394203159@198.213.12.252> wier@merlin.etsu.edu (Bob Wier) writes:

>Having a scanner with a 50 ohm input, I decided to try  
>a tv antenna (yagi) as a directional antenna. Small snag -  
>I got a 300 to 75 ohm transormer, fed it to the 50  
>ohm input and it seemed to work reasonably well, but  
>I'd still like to get a better match. Does anyone know  
>where you can come up with a 300 ohm balanced to 50  
>ohm unbalanced (coax) transformer which would be good

>up to about 1Ghz?

You are making a rash assumption that the input impedance of your scanner is 50 Ohms across its range. Trust me, it isn't.

If your antenna is not working optimally with your scanner, there are many things that could be wrong besides the balun and coax impedance. Loss in the balun at frequencies of interest may be one, so get the best TV/UHF balun you can find. The antenna may not be optimum at the frequencies of interest.

Feeding your scanner with 75 Ohm coax won't make any difference that you will notice. Feeding it with a long run of cheesy coax will make a difference.

Getting your antenna up high and in the clear will make a difference.

--

Julian Macassey, N6ARE julian@bongo.tele.com Voice: (310) 659-3366  
Paper Mail: Apt 225, 975 Hancock Ave, West Hollywood, California 90069-4074

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Date: 28 Feb 94 06:25:08 GMT  
From: nprdc!ihnp4.ucsd.edu!ucsnews!sol.ctr.columbia.edu!howland.reston.ans.net!  
agate!library.ucla.edu!csulb.edu!tern.csulb.edu!usenet@network.ucsd.edu  
Subject: Errors in TNC2 firmware???  
To: info-hams@ucsd.edu

I have recently been experimenting with TNC2 clones and had run across two peculiar "bugs" in the firmware of an MFJ 1278, and a tiny TNC2.

The first problem relates to when the TNC2 sends to the computer the "Change incoming stream" command ("|B" to switch to stream B, for example). It seems that when in command mode, the TNC set the output stream to be equal to the input stream whenever it sends the "cmd:" prompt (if, of course, the output stream was set to something else previously). So if you are in command mode in stream A, and send a "|b" to set the input stream to B, and press Enter, the tnc will respond with "|Bcmd:" to tell that the output stream should now ALSO be set to stream B. The problem is this: The stream switch is sent JUST before sending the cmd: prompt. So if you are on stream A in command mode, and type "|bcst<CR>" to set the input to stream B and get the status of all streams, the tnc will send the results, THEN the |B, then the new cmd: prompt. SO, the output of

the cst request made on stream B will be sent to stream A. In fact, the results will show that the input stream is B, while the output stream is A! Of course, if you type another "cst<CR>", the results will be sent to the proper stream, because it has already been corrected. Do all TNC2's exhibit this feature?

The second problem is more major. It seems that when I am connected on two streams, and send text out on the first stream, and then switch to the second and do nothing, all output from the tnc is halted. For example, if I am connected on stream A and B to two bbs's, and I am currently on stream A, and I send "l<CR>|B" to list all files on the first bbs and then switch my input to the second bbs, the tnc will halt all output back to me. The results of the list command will come back to the tnc, and the tnc will receive them all internally, but will not send them to the computer....UNTIL I sent something to the tnc first. (Usually I send "^ck<CR>" to enter and then leave command mode. This will then allow all buffered data to be sent to me. However, if you do not send anything to the tnc, it will send nothing to you.

I have found these problems by using paKet 5.1. PaKet creates a different window for each of the tnc's streams, and pressing a shifted arrow key allows you to switch between the streams. When you do this, paKet sends a "|" and the stream identifier. Therefore, it is very easy to switch to another stream to view incoming data, without wanting to send anything, thus causing the second problem. And having entering a command in one window and having the output return in another window (the first problem) was also easily spotted. I have reproduced these problems using a simple terminal, so they are not errors with paKet.

One other note. I have also played with some Kantronics Tnc. They do not appear to have the lockup problem, but have an even worse version of the first bug. The incoming stream sent from the Kan TNC's is only changed when data comes in from over the air, not from commands. So if I am on stream A, and switch to stream B, SEND a <CR>, (this would fix the TNC2 problem), and start sending commands, the tnc never send me the stream switch command, so all the feedback from my commands always goes to stream A, (or whatever the last stream to receive over the air was). This is very frustrating when using paKet!

Anyone have any comments on any of this? Has anyone else experienced this? Any ideas for solutions?

--

Byon Garra-brant KD6BCH byon@csulb.edu

-----  
Date: 28 Feb 94 04:08:32 GMT  
From: nprdc!ihnp4.ucsd.edu!swrinde!cs.utexas.edu!howland.reston.ans.net!  
sol.ctr.columbia.edu!hamblin.math.byu.edu!yvax.byu.edu!sandersm@network.ucsd.edu  
Subject: FT-530 vs TH-78A  
To: info-hams@ucsd.edu

I am debating on wether to buy a Yaesu FT-530 or a Kenwood Th-78A. I would like to hear experiences from owners of both radios. I am new to this hobby and would appreciate any info. 73's TNX Chad

-----  
Date: 28 Feb 94 05:49:10 GMT  
From: nprdc!ihnp4.ucsd.edu!swrinde!gatech!newsxfer.itd.umich.edu!  
elvis.umd.umich.edu!erik@network.ucsd.edu  
Subject: Help!!! Please :)  
To: info-hams@ucsd.edu

i Recently purchased a Kenwood r-5000 general coverage receiver. This machine was used so I didn't get a manual....I've figured out everything except for probably the most obvious feature....I cannot figure out how to set the clock, go figure. If anyone could give me at least a clue, it would be appreciated.

Thanks and 73,

Erik N8QLS

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Date: Thu, 3 Mar 1994 15:34:56 GMT  
From: ihnp4.ucsd.edu!swrinde!gatech!wa4mei!ke4zv!gary@network.ucsd.edu  
Subject: Medium range point-to-point digital links  
To: info-hams@ucsd.edu

In article <CM1nqJ.MBx@srgenprp.sr.hp.com> glenne@sad.hp.com (Glenn Elmore) writes:

[I wrote]

>> We're dealing with a very sparse matrix here. You don't seem to understand  
>> that as you sit in a dense metroplex with hams on nearly every block. The  
>> rest of the country just isn't like that. \*Most\* of our links are 60-80 miles  
>> long, over unfavorable terrain, to sites we can \*get\*. Nearly \*none\* of them  
>> are LOS. We \*depend\* on the beyond LOS propagation available most easily at  
>> lower frequencies to maintain those links. (If we could muster the power to  
>> do microwave forward scatter, that would be different, but there just aren't

>> enough surplus TWTs out there to do the job, and site managers frown on 32 ft  
>> dishes on their towers. We \*can't\* depend on inversions and ducts, they just  
>> aren't reliable enough.)

>

> At least you and I agree on the need for engineered, reliable links  
>and that construction of a network will take a great deal of  
>cooperation. I've emphasized that one of the few strengths amateur networking  
>\*may\* have is "ins" and access to local sites. All these are  
>points I've tried to make in some of my CNC contributions.

Yes, but as you indicate below, the sites we \*can\* get aren't usually  
sufficient for a LOS network of national scope. I can't emphasize enough  
how \*big\* the vacant spaces are between groups of amateur packeteers in  
much of the country, or how unsuited to LOS paths much of the terrain  
separating them is.

> And in case you think I'm in a densely populated, ideal terrain out here,  
>think again. Mountains only work for you when you can get access and have  
>helpers to maintain them (as you suggest). I end up spending a lot of my time  
>with a 3 arc-second elevation database trying to figure out how to make  
>a well connected network out of sparse users and large obstacles. My few  
>links are (too) long just as you say yours are there.

Yes, but, for example, there are more hams in LA metro than in all of  
Georgia. Other states are even less densely populated with amateurs  
and/or suitable high sites. This is a source of incredible frustration  
to a potential network designer.

> My argument with your 56kbps approach is that it simply doesn't come  
>close to being enough capacity. It isn't nearly adequate for the needs  
>of a competitive nationwide amateur network. And, in addition, depending  
>on non-LOS propagation while maintaining reliability is an even less  
>optimum use of resources.

The only reason I'm pushing 56 kb BLOS links is that I think they're closer  
to \*possible\* than microwave LOS links in many cases. I do \*not\* say  
we shouldn't use faster links where we can make them work. I just don't  
think that's going to be enough places to fill out the national network.  
I think we're going to have to use beyond LOS paths for a lot of the  
links, just as we do now at 1200 and 9600 baud. If we can upgrade most  
of those to 56 kb, we'll have made a large improvement in the network  
capacity and capability. Now I know that doesn't fulfill your dream  
of a data superhighway, but just as we don't build interstates anymore  
because it's too costly to serve the remaining areas, I think we have  
to scale our network plans to the reality of paved two lane rural highways.  
That's still a big step up from the game trails and dirt ruts we're  
using now.

> How do you intend to support even a fraction of the "20% of hams who call  
>packet their primary mode" with even \*mediocre\* performance (never mind  
>something competitive with telephone line modems which would stimulate and  
>support growth), 50 dB fade margins etc?

As the telcos know, most traffic is local. Out of LATA traffic is orders of magnitude less than what the local switches have to support. I'm talking about the out of LATA connectivity here. If a local area can support megabaud+ local hubs, great, but for the vast expanses the national net has to cross, that's not viable. A 20:1 ratio of intra-LATA to inter-LATA capacity is reasonable.

> You've presented some equations relative to non-quality paths, troposcatter  
>etc, could you show us how a system like that can provide the required  
>total information capacity and approximately what it might cost?

I'll give a quick cost estimate, about \$6 million in capital outlays and a continuing site rental of around \$1.5 million per year. That'll buy us a 47X increase in speed, and a much higher increase in effective throughput due to engineered duplex non-contending links, over what we have now, and give us the full connectivity that we currently lack. Long distance performance will be limited by the network delays and capacity limits, but at least it will exist.

> Could you present an estimation for us all of what the approximate vhf  
>hardware and resulting per-user capacity of a reliable nationwide  
>network of 3000 56 kbps full duplex nodes (your numbers) using beyond  
>LOS propagation might be? Please show not only margins and hardware for  
>an individual link but also an estimate of the spacial and frequency reuse  
>problem/potential.

>

> My estimates and opinion of the above indicate that it falls orders of  
>magnitude short of providing service adequate to support itself in an  
>amateur environment. I truly hope you can show me my error(s) and that a  
>beyond-LOS vhf network is viable.

Well there is an existence proof that beyond LOS VHF networks are viable in the amateur community, \*the existing 1200 baud networks\*, and their site costs are on the same order as the proposed system. What I'm proposing is a dramatic upgrading and expansion, at low UHF, of that system, but with the careful engineering and organizational maintenance that the current system lacks. No it won't carry long distance digitized voice or video, much as I would like that to be true, nor will it allow remote interactive logins on a coast to coast basis, but it will allow the movement of Email and other bulk data transfers in a timely manner in a way that's completely divorced from the commercial communications infrastructure. And higher speed links in local areas, \*where they are viable\*, will allow some of those advanced features. We just can't support that kind of bandwidth and response

time on a national basis. Too many sites, too much geography, too few hams.

Gary

--

Gary Coffman KE4ZV		You make it,		gatech!wa4mei!ke4zv!gary
Destructive Testing Systems		we break it.		uunet!rsiatl!ke4zv!gary
534 Shannon Way		Guaranteed!		emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244				

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Date: 3 Mar 94 15:17:27 -0800

From: news.acns.nwu.edu!math.ohio-state.edu!sdd.hp.com!sgiblab!  
wrdis02.robins.af.mil!apollo.robins.af.mil!woodj@network.ucsd.edu  
Subject: Nude Radio Amateurs  
To: info-hams@ucsd.edu

In article <2kti7d\$1ai@transfer.stratus.com>,  
northup@hoop.sw.stratus.com (Bill Northup) writes:

> julian@bongo.tele.com (Julian Macassey) writes:

> :

> : The Conservative radio amateurs always make sure they are

> : properly attired before engaging in QSOs.

>

> Does this mean that we have to start practicing safe QSOs ?

Should the prophylactic go over the speaker or the key/microphone??

What about safe QSOs on packet!? Cover the the CRT and keyboard???

Maybe one big prophylactic covering the antenna would be a cure-all?

The answer: Abstinence. Result: Less band crowding. :^) Jim KA4GHX

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Date: Thu, 3 Mar 1994 14:51:46 GMT

From: netcomsv!netcomsv!bongo!julian@decwrl.dec.com

To: info-hams@ucsd.edu

References <1994Mar2.144907.26098@bongo.tele.com>, <CM2960.93I@ucdavis.edu>,  
<2l3nuj\$pr@bigfoot.wustl.edu>

Subject : Re: JARGON

In article <2l3nuj\$pr@bigfoot.wustl.edu> jlw3@cec3.wustl.edu (Jesse L Wei) writes:

>Now this is my question: do hams \*ever\* talk about anything besides what

>kind of rig (s)he's got, ham problems, ham equipment, etc?

I like to talk about drunkenness, debauchery, politics and  
current affairs. This may be the reason that no one ever talks to me  
on the Los Angeles repeaters.



Mind you, when I do get technical and say things like "Your deviation is low", they offer to change their batteries.

--

Julian Macassey, N6ARE julian@bongo.tele.com Voice: (310) 659-3366  
Paper Mail: Apt 225, 975 Hancock Ave, West Hollywood, California 90069-4074

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Date: Thu, 3 Mar 1994 15:30:14 GMT  
From: news.acns.nwu.edu!math.ohio-state.edu!howland.reston.ans.net!gatech!swrinde!  
sgiblab!wetware!spunky.RedBrick.COM!psinntp!psinntp!arrl.org!zlau@network.ucsd.edu  
To: info-hams@ucsd.edu

References <1994Feb28.154040.17074@ke4zv.atl.ga.us>,  
<1994Feb28.212904.10734@arrl.org>, <1994Mar2.054202.25433@ke4zv.atl.ga.us>  
Subject : Re: Medium range point-to-point digital links

Gary Coffman (gary@ke4zv.atl.ga.us) wrote:

: Ah yes, DX Packetcluster. "Hey George, the link's flaky."  
: "Well put up stacked beams and pile on the kilowatts,  
: to hell with the other digital users, the DX spots  
: have to get through." (I've actually heard exchanges  
: like that. The lack of cooperation between the Packetcluster  
: operators and the rest of the digital community is somewhat  
: legendary. It's that Type A DXer mentality.)

Considering what Gary has written, I don't find the lack of cooperation a surprise. Nor do I really think it to be a problem worth solving, due to the lack of excess capacity to be shared. Actually, having a number of separate networks may actually be an advantage in an emergency, since the redundancy may help assure that something is still working after the disaster strikes. It might also be useful for seeing what actually works better in the real world.

BTW--how else does one improve a point to point link, besides using bigger antennas and more power? The only solutions I can think of are changing frequencies or adding sites. Obviously, if there is an interference problem, it is easier if the \*other\* guy were to move. I don't think there is any disagreement that sites are hard to find, which is why I say people should keep an open mind and consider a variety of possibilities.

--

Zack Lau KH6CP/1 2 way QRP WAS  
8 States on 10 GHz  
Internet: zlau@arrl.org 10 grids on 2304 MHz

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Date: Thu, 3 Mar 1994 14:41:59 GMT  
From: ihnp4.ucsd.edu!sdd.hp.com!vixen.cso.uiuc.edu!howland.reston.ans.net!gatech!  
wa4mei!ke4zv!gary@network.ucsd.edu  
To: info-hams@ucsd.edu

References <gradyCLsKtB.I3r@netcom.com>, <kmeyer.3b0x@bbs.xnet.com>,  
<1994Mar2.175938.12119@alw.nih.gov>  
Reply-To : gary@ke4zv.atl.ga.us (Gary Coffman)  
Subject : Re: Further criminalization of scanning

In article <1994Mar2.175938.12119@alw.nih.gov> weisen@alw.nih.gov (Neil Weisenfeld) writes:

>Rather than thickening the law books, the government should educate the  
>public about what is going on. The public will demand encrypted  
>cordless phones and the manufacturers will deliver. Then the radio  
>voyeurs have more challenges to live up the sport :-). All the law is  
>going to do is damage the lives of the very few people who get caught and  
>damage the lives of the many who blab all sorts of confidential information  
>on their cordless phones.

>

>I'd be interested if other people agree.

I agree, both with the idea that government is too quick to say "there ought to be a law" and that scanner hobbists are at heart voyeurs. That's where the basic difficulty arises. Laws against Peeping Toms have existed for centuries. Congress is trying to extend that principle into the wireless age, but they're making the same mistake here as they are with the problem of violence in society. Banning scanners will be no more effective than banning guns, and has the undesirable side effect of causing unnecessary harm to legitimate users of these tools. The real problem in both cases is sick and twisted individuals with no sense of morals or ethics, not the hardware that enables them to pursue their voyeurism or violence.

Gary

--

Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary

Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary  
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary  
Lawrenceville, GA 30244 | |

-----  
Date: 3 Mar 94 14:59:41 GMT  
From: yuma!galen@purdue.edu  
To: info-hams@ucsd.edu

References <CLMqI7.Bvn@murdoch.acc.Virginia.EDU>,  
<9402271401591.gilbaronw0mn.DLITE@delphi.com>, <213360\$4jr@news.acns.nwu.edu>  
Subject : Re: Electric Fence RFI/ Liabilities

>In article <9402271401591.gilbaronw0mn.DLITE@delphi.com>,  
>Gilbert Baron <gilbaronw0mn@delphi.com> wrote:  
>>>I've got some bad interference on 80 through 10  
>>>meter bands from an electric fence about 500  
>>>feet away. The effect is very sharp clicks  
>>>Anyone have any cures?  
>>>Ned Hamilton, AB6FI  
>>  
>>Well, if you ground the fence, case closed.  
>>                    Gil Baron, El Baron Rojo, WOMN Rochester,MN

If you disable an electric fence and the livestock gets out and causes damage or gets killed, you're in big trouble. Those critters are expensive, and if someone hits one with a car...

If you can wait a few weeks until the grass starts to grow, the livestock will get a few zaps, learn about the fence, and I'll bet the owner shuts it off.

It also helps to make sure the fence has good grounds and no partial shorts to fence poles, the grass, etc.

Galen, KF0YJ  
I get E-fence I too.

-----  
Date: Thu, 3 Mar 1994 19:55:12 GMT  
From: news.Hawaii.Edu!uhunix3.uhcc.Hawaii.Edu!jherman@ames.arpa  
To: info-hams@ucsd.edu

References <2k0eup\$k3o@crcnis1.unl.edu>,  
<rcrw90-180294093408@waters.corp.mot.com.corp.mot.com>,  
<2kcdqj\$nto@crcnis1.unl.edu>.uhcc.

Subject : Re: Keyboards at testing sessions

In article <2kcdqj\$nto@crcnis1.unl.edu> mcduffie@unlinfo.unl.edu (Gary McDuffie Sr) writes:

>rcrw90@email.mot.com (Mike Waters) writes:

>

> >The need is not to show that someone \*is\* or \*could\* cheat, but for them to  
> >prove that they \*could not\* cheat.. If you want to use some piece of  
> >equipment in a testing session \*you\* must show that (a) you are not using  
> >it to cheat and (b) it won't disturb the other test takers.

>

>Oh, we are back to guilty\_until\_proven\_innocent now? Be real!

Gary: I guess you mean to say 'Be realistic' - not sure what 'Be real' means.  
I believe Mike is being realistic - talk to some of the OT VEs about what  
some folks will do, in regards to cheating, in order to pass their test.

When I give a math exam I have to be quite vigilant in watching my  
students; I've given quite a few Fs over the years to those I've caught  
cheating. The students who've spent many, many hours preparing for an exam  
should not have to share their reward with someone who was irresponsible  
in their studies, whether it's a government radio exam or math exam.

73,  
Jeff

=====

Jeffrey Herman NH6IL jherman@hawaii.edu, who, in his spare time, cannibalizes  
old TV sets to make QRPP transmitters (CW, of course).

Previously: WA6QIJ, WH6AEQ, NMO (U.S. Coast Guard Radio Honolulu: 500 kc CW)  
NMC6 (U.S. Coast Guard Group Monterey)

Vietnamese Proverb: If you study you will become what you wish  
If you do not study you will never become anything.

=====

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Date: Thu, 3 Mar 1994 19:10:07 GMT

From: news.acns.nwu.edu!math.ohio-state.edu!howland.reston.ans.net!

vixen.cso.uiuc.edu!sdd.hp.com!sgiblab!sgigate.sgi.com!odin!chuck.dallas.sgi.com!

adams@network.ucsd.edu

To: info-hams@ucsd.edu

References <14@ted.win.net><CLWqAH.LHE@odin.corp.sgi.com>, <110@ted.win.net>,  
<CM3nI1.79r@odin.corp.sgi.com>

Subject : Re: 40 meter QRP (cw or ssb)

In article <110@ted.win.net>, mjsilva@ted.win.net (Michael Silva) writes:

...stuff deleted...

|> >World Record is 75.2 WPM. It will not stand for much longer.

...more stuff deleted...

|> Why won't it stand much longer?

|>

|>

|> Mike, KK6GM

|>

|>

it should be broken by one or more people within the next year.  
my prediction.

dit dit

--

Chuck Adams K5FO CP-60

adams@sgi.com

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End of Info-Hams Digest V94 #234

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